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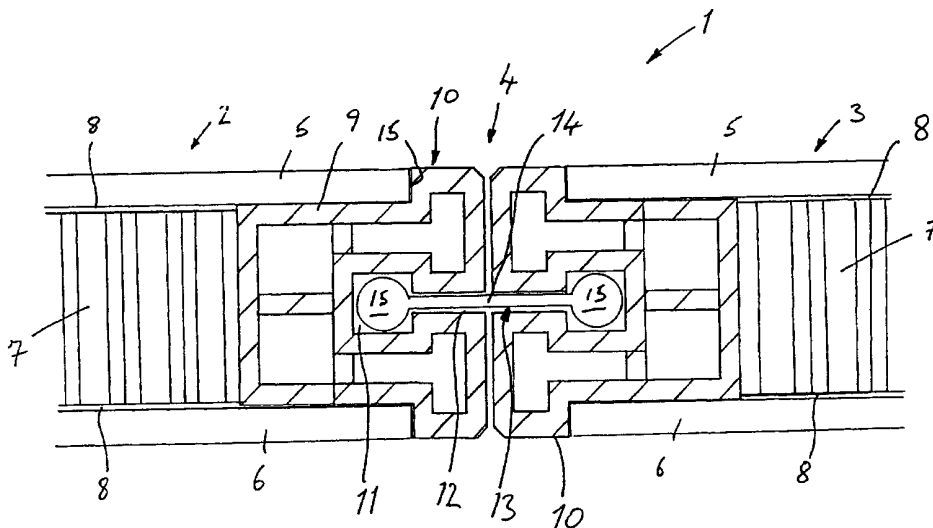
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[Continued on next page]

(54) Title: PANEL AND PANEL SYSTEM



(57) Abstract: The panel has an intermediate body layer separating spaced first and second layers, the body layer comprising a multiplicity of cells having cell walls extending in the direction of spacing of the first and second spaced layers. The panels form a panel system with adjacent edges having longitudinally running connectors facilitating connection of adjacent edges of adjacent panels by relative sliding in the longitudinal direction of the adjacently arranged edges. The panel system includes a panel support, the panel and support being configured for releasable connection to the one another by an interlocking connection in which limited relative movement of the support across the face of the panel is permitted between a release orientation, in which connection and separation of the panel and support is facilitated, and an interlocked orientation in which separation of the panel and support is restricted.



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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Panel and Panel System

The present invention relates to a panel and panel system, particularly to a panel and panel system for use in staging, decking, or display applications such as in constructing staging, exhibition platforms or set design.

Decking panel systems for use in providing elevated staging systems are known and for example disclosed in EP-A-0851073. Another such system comprises an expandable aluminium support riser framework (disclosed in EP-A-0884425) over which is laid steel or aluminium framed plywood decking panels. The decking panels of the system are heavy and cumbersome. Furthermore, the interconnection arrangement (including connection pegs) permitting connection of adjacent panels is relatively inflexible permitting matching panels to be connected co-extensive edge to co-extensive edge. Furthermore, connection is facilitated at panel corners only, such that there exists no solid coupling along the majority of the length of the edge to edge panel interface. Differential loading of adjacent panels tends to cause relative displacement and separation of panel edges at the edge to edge interface of adjacently laid panels.

An improved panel and panel system has now been devised.

According to first aspect, there is provided a structural panel comprising an intermediate body layer separating spaced first and second layers, said body layer comprising a multiplicity of cells having cell walls extending in the

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direction of spacing of the first and second spaced layers.

5 Desirably, in the body layer each cell has an axis, the cell axes being oriented in the direction of spacing of the first and second spaced layers. The cells are preferably arranged in side by side relationship, preferably such that cell walls of adjacent cells are adjacent one another.

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It is preferred that the cells in the body layer are of a cross sectional space filling shape (transverse to the axial direction) permitting tessellation. To this end the cross section of the cells transverse to the cell axial direction may be square, triangular, hexagonal or otherwise. An hexagonal cross section is particularly preferred, providing a body layer of honeycomb like construction. The cells comprising the body layer may be substantially tubular.

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The body layer preferably comprises an integrally formed self supporting cellular layer structure. Desirably, the body layer comprises a plastics layer such as a layer of polypropylene. Desirably, the body layer is of extruded construction, preferably extruded in the axial direction of the cells.

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At least one (preferably both) of the spaced first and second layers comprises a substantially rigid material, preferably a sheet of substantially rigid material.

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At least one (preferably both) of the spaced first and second layers comprises a substantially rigid wood or plywood material, preferably a sheet of substantially rigid wood or plywood material.

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The intermediate body layer is preferably bonded to or integral with at least one (preferably both) of the spaced first and second layers. Desirably, a curable bonding medium is used. In a preferred embodiment, the first and/or second layer is bonded to a respective face of the body layer by means of suitable bonding material. Desirably, a bonding layer is provided intermediate the respective first or second spaced layer and the respective portion of the body layer. The bonding layer may include a membrane or sheet (preferably porous) impregnated with, or for receiving, the bonding medium. Bonding of the first and/or second spaced layers to the intermediate body layer permits shear forces transferred to the spaced layers by loading of the panel to be transmitted to the intermediate body layer.

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The panel preferably comprises one or more edge elements running along one or more edges of the panel. The or each edge elements are preferably bonded to the first and second layers. This permits shear forces transferred to the first and second layers by loading of the panel to be transmitted to the respective edge element, aiding in enhancing the overall rigidity of the panel. Desirably, each edge of the panel is provided with an edge element, preferably so bonded.

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The panel is preferably configured such that at least one (preferably both) of the first and second spaced layers extends beyond the extent of the extent of the body layer, preferably so as to define a revetment or recess. An edge element is preferably shaped to be received in the revetment or recess. The edge element preferably includes a respective flange portion arranged to abut the terminal edge of one (or more preferably both) of the spaced first and second layers.

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The edge portion preferably includes a connection formation permitting connection of complementary edge portions provided on adjacently arranged panels, thereby permitting edge to edge connection of panels in a connected panel/decking system. The connection formation preferably comprises a longitudinally running formation (for example a groove or recess) arranged to locate with a transverse marginal portion of a longitudinally running connection element, the other transverse marginal portion of the connection element being arranged to locate with a complementary connection formation provided for the edge element of an adjacently laid panel.

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The connection element is preferably arranged to slidably engage with the edge elements of adjacent panels, with marginal portions of the connection element subsequently being held captive relative to respective edge elements of adjacently laid panels, inhibiting separation of said panels.

30

The connection element is preferably of a material

-5-

providing a degree of rigidity (particularly in the direction transverse to the longitudinal edge direction.

In a preferred embodiment, the connection element is
5 configured to include transverse marginal portions of
greater thickness than a web portion connecting the
marginal portions. The increased thickness marginal
portions are preferably received in respective slot
10 formations in respective panel edge elements, which slot
formations include a relatively narrower mouth opening to
a relatively larger marginal portion receiving recess.
The respective slot formations preferably run
substantially along the entire longitudinal extent of the
respective panel edge element, and are preferably open
15 proximate at least one (preferably both) longitudinal ends
of the slot in order to permit sliding insertion of the
connection element. It is believed that such an
arrangement is novel and inventive per se.

20 According to a second aspect, the invention provides a
panel system comprising a plurality of panels arranged in
edge to edge adjacent relationship, adjacent edges being
provided with a respective longitudinally running
connection formation facilitating connection of adjacently
25 arranged edges of adjacent panels by relative sliding in
the longitudinal direction of the adjacently arranged
edges causing mating of a connection element with a panel
edge connecting formation.

30 Desirably, preferred features of the edge connection are
as described above in relation to the first aspect of the

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invention.

The panel system is preferably provided with support means arranged to be positioned beneath the decking panels in order to support the panels in an elevated position.

Each decking panel is preferably provided with a respective support module arranged to underlie a respective panel. The support modules may comprise collapsible support frame modules (as known in the art) which are expandable from a collapsed configuration to an expanded configuration in order to underlie substantially the entire area of a respective panel.

Desirably the decking panel according to the invention is provided with location means to locate the support means in position. The location means is preferably provided on the underside of the panel, preferably proximate the edge of the respective panel.

The feature described above of the edge element of the panel fitting in a recess defined by the edge of the body layer and one or both of the first and second layers permits the location means for the support means to be positioned extremely close to the edge of the panel. This has advantages in minimising the degree of possible deflection at the adjacently arranged edges due to panel loading. A preferred embodiment of support and panel connection is defined below.

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According to a further aspect the invention provides a panel system comprising a panel and a support for the panel, the panel and support being configured for releasable connection to one another by means of an interlocking connection in which limited relative movement of the support across the face of the panel is permitted between a release orientation, in which connection and separation of the panel and support is facilitated, and an interlocked orientation in which separation of the panel and support is restricted.

Desirably the panel and support are guided in relative movement between the release and interlocked positions, preferably by guide formations carried by the support and/or panel.

It is preferred that the relative movement of the support and panel between the release orientation and the interlocked orientation is substantially translational movement.

It is preferred that the relative movement of the support and panel between the release orientation and the interlocked orientation is substantially relative sliding movement.

The interlocking connection inhibits separation of the support from the panel in a direction transverse to the plane of the panel when the panel and support are orientated in the interlocked orientation. Sliding the support to the release orientation relative to the panel

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permits separation of the support from the panel in a direction transverse to the plane of the panel.

5 The interlocking connection between the panel and the support as defined permits convenient and rapid assembly/disassembly of panel systems according to the invention.

10 It is preferred that the interlocking connection includes a captive portion (preferably comprising the support) and a capture portion (preferably comprising the panel), the capture portion being arranged to retain the captive portion when the panel and support are orientated in the interlocked orientation. The captive portion preferably
15 comprises a head portion arranged to be slidably received in the capture portion.

The capture portion preferably includes a mouth aperture or recess into which the captive portion may be introduced
20 (and out of which the captive portion may be withdrawn), and a detent portion having detent formations arranged to lie adjacent the captive portion and inhibit separation of the panel and support. The detent portion preferably
25 comprises a slot or channel communicating with the mouth aperture or recess of the capture portion. In the interlocked orientation a neck portion of the support (preferably connected to the head portion) desirably extends through the slot or channel.

30 It is preferred that the interlocking connection is facilitated proximate the edge of the panel, preferably

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proximate a corner of the panel. Desirably interlocking connection between panel and support is facilitated proximate a plurality of corners of the panel. Where the panel is substantially square or rectangular in configuration, an interlocking connection between support and panel is facilitated at each corner of the panel.

The support preferably comprises a support limb, preferably provided with a bolster element arranged to be positioned adjacent the face of the panel when the support limb is connected to the panel. The bolster element typically supports the panel where the panel is utilised in load bearing applications. The bolster element is preferably arranged to be positioned about the interlocking connection. The bolster element and panel are preferably provided with complementary engageable formations to ensure location of the interlocking connection particularly, preferably, in the interlocked orientation.

Desirably, the support comprises an expandible/collapsible framework including a plurality of support limbs arranged to be spaced when the framework is in expanded configuration. Desirably a plurality of limbs in the expandible framework are configured to provide the interlocking connection with the panel.

In a preferred embodiment the interlocking connection comprises:

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a male captive head carried by the support; and,

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a female capture recess provided for the panel, the recess including a mouth portion into which the captive head may be introduced and a slot portion adjacent to and communicating with the mouth portion, the slot portion being configured to retain the captive head against separation from the panel in a direction transverse to the plane of the panel.

The panel system can be utilised in situations where the panel is load bearing (where the panel will rest on the support interlocked with the support) or where the panel is suspended from the support. Additionally the panels may be oriented vertically. The interlocking connection which is the subject of the invention permits such a wide variety of arrangements to be utilised. Prior art arrangements (such as the arrangement disclosed in EP-A-0884425) are suitable for use as panel bearing supports only. Furthermore there is a danger of the panels slipping out of alignment with the underlaying support which can result in destabilisation of a supported panel system.

The panel system having interlocking connection between the support and panel has particular advantage in providing rapid assembly/disassembly for supported panel systems. Synergy is provided in using such a feature with the earlier defined aspects of the invention in providing well supported, lightweight edge connected supported panel systems. It is therefore preferred that the panels and edge connection aspects of earlier defined aspects are utilised in combination with the interlocking

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support/panel aspect of the invention.

The invention will now be further described, by way of example only, in specific embodiments and with reference to the accompanying drawings, in which:

Figure 1 is a schematic sectional view of panels comprising a panel system according to the invention;

Figure 2 is a perspective view of the panel system of figure 1 in assembly;

Figure 3 is a schematic view of a panel/support connection arrangement according to the invention;

Figure 4 is a plan view of a panel side portion of the connection shown in figure 3;

Figure 5 is a perspective view of an alternative embodiment of a connector element useable in a panel system according to the invention; and,

Figures 5 and 6 are side and perspective views (corresponding to figures 1 and 2) of the panel system utilising the connector element of figure 5.

Referring to the drawings and initially to figures 1 and 2 in particular, there is shown a staging system (generally designated 1) comprising a pair of substantially identical rectangular decking panels 2, 3 connected along a marginal edge interface 4.

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Each decking panel 2, 3 comprises respective upper and lower plywood panel skins 5, 6 spaced by an intermediate cellular body layer 7 of honeycomb (hexagonal) shaped cells in extruded polypropylene. The cell axes of the hexagonal cells comprising the integrally formed cellular layer 7 extend in the direction of spacing of the plywood panel layers 5, 6.

Respective sheets 8 of flexible absorbent material are bonded over opposed upper and lower extents of cellular body layer 7. During manufacture of the decking panels 2, 3, the sheets 8 have curable bonding material applied before plywood panels 5, 6 are pressure bonded to the upper and lower extents of the intermediate honeycomb cellular body layer 7.

As will be seen from the drawings, the marginal portions of plywood panels 5, 6 extend beyond the extent of the intermediate cellular body layer 7, defining a revetment or recess within which a stem portion 9 of a respective elongate plastics edge element 10 is received. Each elongate edge element 10 is formed of extruded rigid plastics material and includes a flange portion extending outwardly from the stem 9 and terminating at a surface at a level with the respective outer surface of plywood panels 5, 6. The outer edges of respective edge elements 10, abut one another at interface 4.

Each elongate edge element 10 includes a longitudinally running central channel 11 spaced from the outer edge surface of edge element 10, and communicating therewith

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via a narrow slot or mouth 12.

The stem portion 9 of respective edge elements 10 is bonded along upper and lower surfaces to respective plywood panels 5, 6, and along its transverse edge to the upwardly extending edge of honeycomb cellular structure body layer 7.

The "composite" construction of the panel results in a lightweight panel with high modulus of rigidity. When a respective panel 2,3 is loaded bending moments are set up in the composite 'sandwich' panel which resolve into shear forces on the plywood panel skins 5,6. The shear forces are transferred via the bonded connection to the cellular body layer 7 and resolved at the terminal edges of the panel by the elongate edge elements 10 which are bonded to the marginal portions and edges 15 of panels 5. The periphery of the decking panel is typically entirely bounded by such bonded edge elements.

20

Respective panels 2, 3 are connected at the edge interface 4 by means of an elongate extruded plastics connection element 13 comprising a relatively narrow web portion 14 interconnecting spaced thickened (bulbous) marginal portions 15. Bulbous marginal portions 15 are received in the respective channels 11 in adjacent edge elements 10, the web portion 14 spanning the edge interface 4 extending through slots 12.

25

In use, the respective edge elements 10 of panels are arranged adjacent one another. The bulbous marginal

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portions 15 of the connection element 13 are then inserted via an open end of respective channels 11 and slide in the channels 11 in the longitudinal direction of the respective edge elements 10. The connection element 13 is of sufficient rigidity to ensure that relative loading of one panel (causing deflection of that panel) causes corresponding deflection of the edge connected panel and results in a substantial avoidance of trip edges. The deflectional load of one panel is transmitted via the connection element 13 so as to be distributed partially to the connected panel.

The embodiment of connection element 113 shown in figures 5 to 7 comprises an elongate metallic element having upturned marginal portions 115 and an interconnecting spanning portion 114 comprising upwardly inclined spanning portions meeting at a common longitudinally running crest-line 201. The arrangement shown enables the element to flex in a spring-like manner (to a small degree) about the crest-line 201, thereby permitting slight deflection of the upturned marginal portions 115. As shown in figure 6, when the connector element 113 is in position with marginal portions 115 received in respective channels 11, the marginal portions 115 act to prevent separation of the longitudinally joined edges of the adjacent panels 2,3. Flat surface disc portions 202,203 aid in the secure location and alignment of panel edges 10 and also inhibit the release of marginal portions 115 from respective channels 11.

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An important feature of the edge elements is that the stem

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portion 9 is matched in thickness to the thickness of the body layer 7. This ensures secure bonding of the edge element to the plywood panels 5, 6. The edge element has flange return 15 to which the terminal edges of plywood panels 5, 6 are bonded; the return 15 further protects the terminal edges of the plywood skin panels from damage.

The nature and configuration of the slots 11 and connecting element 13 are such that the system enables connection of panels which are not entirely co-extensive (and differently shaped panels) providing portions of adjacent panel edges are co-extensive. Furthermore connection of adjacent panels is effectively continuous along co-extensive edge portions. Differential deflection of adjacent panel edges is therefore substantially ameliorated.

The edge element and connection element enables other structural features to be connected to panels so configured. Such features may comprise kick-edges, walls, stairs, and guard rails.

The decking panels 2,3 are typically supported in an elevated position on riser structures, which may comprise expandable riser arrangements as known in the prior art from, for example EP-A-0884425.

In a preferred embodiment and in accordance with a further aspect of the invention, panels 2/3 are provided with female receiving recesses 20 arranged to receive and retain captive a male head 21 provided on support limb 22.

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Support limb 22 may, for example, comprise an edge limb of a riser arrangement as disclosed in EP-A-0884425.

5 The female recess 20 is defined through a circular metallic plate 23 which is partially sunk into the surface of panel skin 6 and secured to the panel skin 6 (typically by screws 30). The recess 20 is defined by a shaped aperture in plate 23 comprising a circular mouth aperture portion 24 and a slot aperture portion 25 extending away
10 from mouth aperture portion 24 and of a width less than the diameter of mouth aperture portion 24. The aperture in plate 23 is consequently 'key hole' shaped in appearance.

15 Adjacent plate 23 a recessed slot 26 is formed in the skin 6 of panel 2/3 the slot having a width corresponding to the diameter of mouth aperture portion 24. The dimensions of mouth aperture portion 24 and slots 25, 26 are selected such that a terminal flange of 27 of male head 21 is
20 insertable via mouth aperture portion 24 to be received in recess 26 in skin 6. The limb 22 is then moved sideways (in the direction of arrow A in figure 3) causing flange portion 27 of head 21 to slide in slot 26 such that the flange portion is held captive by the edges of the slot aperture portion 25 of the plate 23. Neck portion 33
25 extends through the slot aperture portion 25 of the plate 23. In such a condition the limb 22 cannot be separated from interlocking engagement with panel 6 by simple movement perpendicular to the plane of panel 2/3. It is
30 necessary to purposefully slide limb 22 relative to panel 2/3 in the reverse direction (opposed to arrow A in figure

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3) in order to enable the limb 22 to be separated from panel 2/3.

Limb 22 carries a bolster element 29 which in use engages with plate 23 and provides a bearing surface, particularly where panel 2/3 is used in load bearing applications. Plate 23 is provided with projections (typically the heads of screws 30 securing plate 23 to skin 6). Projections 30 mate with corresponding recesses 31 provided on the upper surface of bolster element 29 to ensure accurate location of limb 22 with the female capture recess 20 when in the interlocked position.

In view of the fact that the edge elements are flush with the plywood skin 6 underside, the riser locators (female sockets 20 may be positioned close to the panel interface 4. This aids in minimising the differential deflection of adjacent panels due to differential loading.

Whilst described primarily in relation to load bearing panel systems, the invention is also suited to, and makes possible the use of supported suspended panels and also the use of panels supported in a vertical orientation. Such adaptability makes the panel system of the invention particularly useful for constructing temporary display structures and the like.

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The panel system having interlocking connection between the support and panel has particular advantage in providing rapid assembly/disassembly for supported panel systems. Synergy is provided in using such a feature in combination with a composite, edge connected panel arrangement in providing well supported, lightweight edge connected supported panel systems.

Claims:

1. A structural panel comprising an intermediate body layer separating spaced first and second layers, said
5 body layer comprising a multiplicity of cells having cell walls extending in the direction of spacing of the first and second spaced layers.
2. A panel according to claim 1, wherein the body layer
10 cell axes are oriented in the direction of spacing of the first and second spaced layers.
3. A panel according to any preceding claim, wherein the
15 cells are arranged in side by side relationship, cell walls of adjacent cells being adjacent one another.
4. A panel according to any preceding claim, wherein the
20 cells in the body layer are of a cross sectional space filling shape permitting tessellation.
5. A panel according to any preceding claim, wherein the
25 cross section of the cells transverse to the cell axial direction is hexagonal providing a body layer of honeycomb like construction.
6. A panel according to any preceding claim, wherein the
30 cells comprising the body layer are substantially tubular.

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7. A panel according to any preceding claim, wherein the body layer comprises an integrally formed self supporting cellular layer structure.
- 5 8. A panel according to any preceding claim, wherein at least one of the spaced first and second layers comprises a substantially rigid material.
- 10 9. A panel according to any preceding claim, wherein both of the spaced first and second layers comprises a substantially rigid material.
- 15 10. A panel according to any preceding claim, wherein at least one of the spaced first and second layers comprises a substantially rigid wood or plywood material.
- 20 11. A panel according to any preceding claim, wherein the intermediate body layer is bonded to one or both of the spaced first and second layers.
- 25 12. A panel according to any preceding claim, wherein the first and/or second layer is bonded to a respective face of the body layer by means of suitable bonding material.
- 30 13. A panel according to any preceding claim, wherein a bonding layer is provided intermediate the respective first or second spaced layer and the respective portion of the body layer.

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14. A panel according to claim 13, wherein the bonding layer comprises a membrane or sheet impregnated with, or for receiving, a bonding medium.
- 5 15. A panel according to any preceding claim, wherein the panel is provided with one or more edge elements running along one or more edges of the panel.
- 10 16. A panel according to claim 15, wherein the or each edge elements are bonded to the first and second layers.
- 15 17. A panel according to any preceding claim, wherein the panel is configured such that at least one of the first and second spaced layers extends beyond the extent of the extent of the body layer, so as to define a revetment or recess.
- 20 18. A panel according to claim 17, wherein the panel is provided with at least one edge element running along a respective edge of the panel, the edge element being shaped to be received in the revetment or recess.
- 25 19. A panel according to any preceding claim, including at least one edge element running along a respective edge of the panel, the edge element including a respective flange portion arranged to abut the terminal edge of one or both of the spaced first and
30 second layers.

20. A panel according to any of claims 15 to 19, wherein the edge element includes a connection formation permitting connection of complementary edge elements provided on adjacently arranged panels.

5

21. A panel according to claim 20, wherein the connection formation comprises a longitudinally running formation arranged to locate with a transverse marginal portion of a longitudinally running connection element, the other transverse marginal portion of the connection element being arranged to locate with a complementary connection formation provided for the edge element of an adjacently laid panel.

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22. A panel according to claim 21, wherein the connection element is arranged to slidably engage with the edge elements of adjacent panels, with marginal portions of the connection element subsequently being held captive relative to respective edge elements of adjacently laid panels, inhibiting separation of said panels.

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23. A panel according to claim 21 or claim.22, wherein the connection element is of a material providing a degree of rigidity (particularly in the direction transverse to the longitudinal edge direction).

25

24. A panel according to any of claims 21 to 23, wherein the connection element is configured to include transverse marginal portions extending transversely

30

to a web portion connecting the marginal portions, the marginal portions being received in respective slot formations in respective panel edge elements.

- 5 25. A panel system comprising a plurality of panels arranged in edge to edge adjacent relationship, adjacent edges being provided with respective longitudinally running connection formation means facilitating connection of adjacently arranged edges of adjacent panels by relative sliding in the longitudinal direction of the adjacently arranged edges causing mating of a connection element with a respective panel edge connecting formation.
- 10
- 15 26. A panel or panel system according to any preceding claim further comprising support means arranged to be positioned beneath the panel(s) in order to support the panel(s) in an elevated or proud-standing position.
- 20
27. A panel or panel system according to claim 26, wherein the support means comprises a respective support module arranged to underlie a respective panel.
- 25
28. A panel or panel system according to claim 27, wherein the support module comprises a collapsible support frame module expandable from a collapsed configuration to an expanded configuration in order to underlie substantially the entire area of the respective panel.
- 30

29. A panel or panel system according to any of claims 26 to 28, wherein the panel is provided with location means to locate the support means in position.

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30. A panel system comprising a panel and a support for the panel, the panel and support being configured for releasable connection to one another by means of an interlocking connection in which relative movement of the support relative to the face of the panel is permitted between a release orientation, in which connection and separation of the panel and support is facilitated, and an interlocked orientation in which separation of the panel and support is restricted.

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31. A panel system according to claim 30, wherein the panel and support are guided in relative movement between the release and interlocked positions.

20

32. A panel system according to claim 30 or claim 31, wherein the relative movement of the support and panel between the release orientation and the interlocked orientation is substantially translational movement.

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33. A panel system according to any of claims 30 to 32, wherein the relative movement of the support and panel between the release orientation and the interlocked orientation is substantially relative sliding movement.

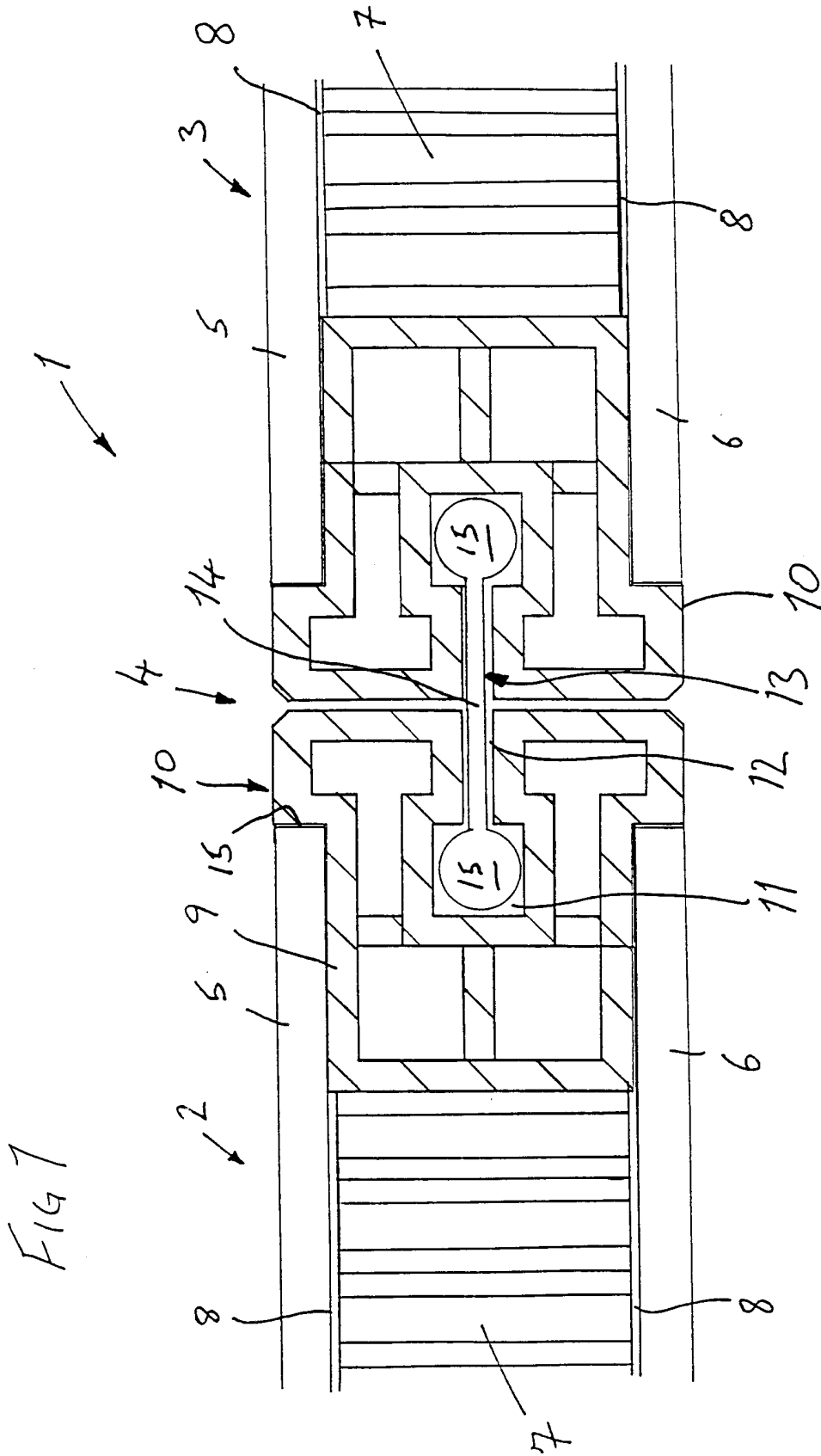
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34. A panel system according to any of claims 30 to 33, wherein the interlocking connection includes a captive portion and a capture portion, the capture portion being arranged to retain the captive portion when the panel and support are orientated in the interlocked orientation.
- 5
35. A panel system according to claim 34, wherein the captive portion comprises a head portion arranged to be slidably received in the capture portion.
- 10
36. A panel system according to claim 34 or claim 35, wherein the capture portion includes a mouth aperture or recess into which the captive portion may be introduced (and out of which the captive portion may be withdrawn), and a detent portion having a detent formation arrangement arranged to lie adjacent the captive portion and inhibit separation of the panel and support.
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- 20
37. A panel system according to claim 36, wherein the detent portion comprises a slot or channel communicating with the mouth aperture or recess of the capture portion, in the interlocked orientation a neck portion of the support extends through the slot or channel.
- 25
38. A panel system according to any of claims 30 to 37, wherein the interlocking connection is facilitated proximate a corner of the panel.
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39. A panel system according to any of claims 30 to 38,
wherein the support comprises a support limb provided
with a bolster element arranged to be positioned
adjacent the face of the panel when the support limb
is connected to the panel.
- 5
40. A panel system according to claim 39, wherein the
bolster element and panel are provided with
complementary engageable formations to ensure
location of the interlocking connection in the
interlocked orientation.
- 10
41. A panel system according to any of claims 30 to 40,
wherein the support comprises an
expandible/collapsible framework or module including
a plurality of support limbs arranged to be spaced
when the framework or module is in expanded
configuration.
- 15
42. A panel system according to claim 41, wherein a
plurality of limbs in the expandible framework or
module are configured to provide interlocking
connection with the panel.
- 20
43. A panel system according to any of claims 30 to 42,
wherein the interlocking connection comprises:
- 25
- a male captive head carried by the support; and,
- 30
- a female capture recess provided for the panel, the
recess including a mouth portion into which the

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5 captive head may be introduced and a slot portion adjacent to and communicating with the mouth portion, the slot portion being configured to retain the captive head against separation from the panel in a direction transverse to the plane of the panel.



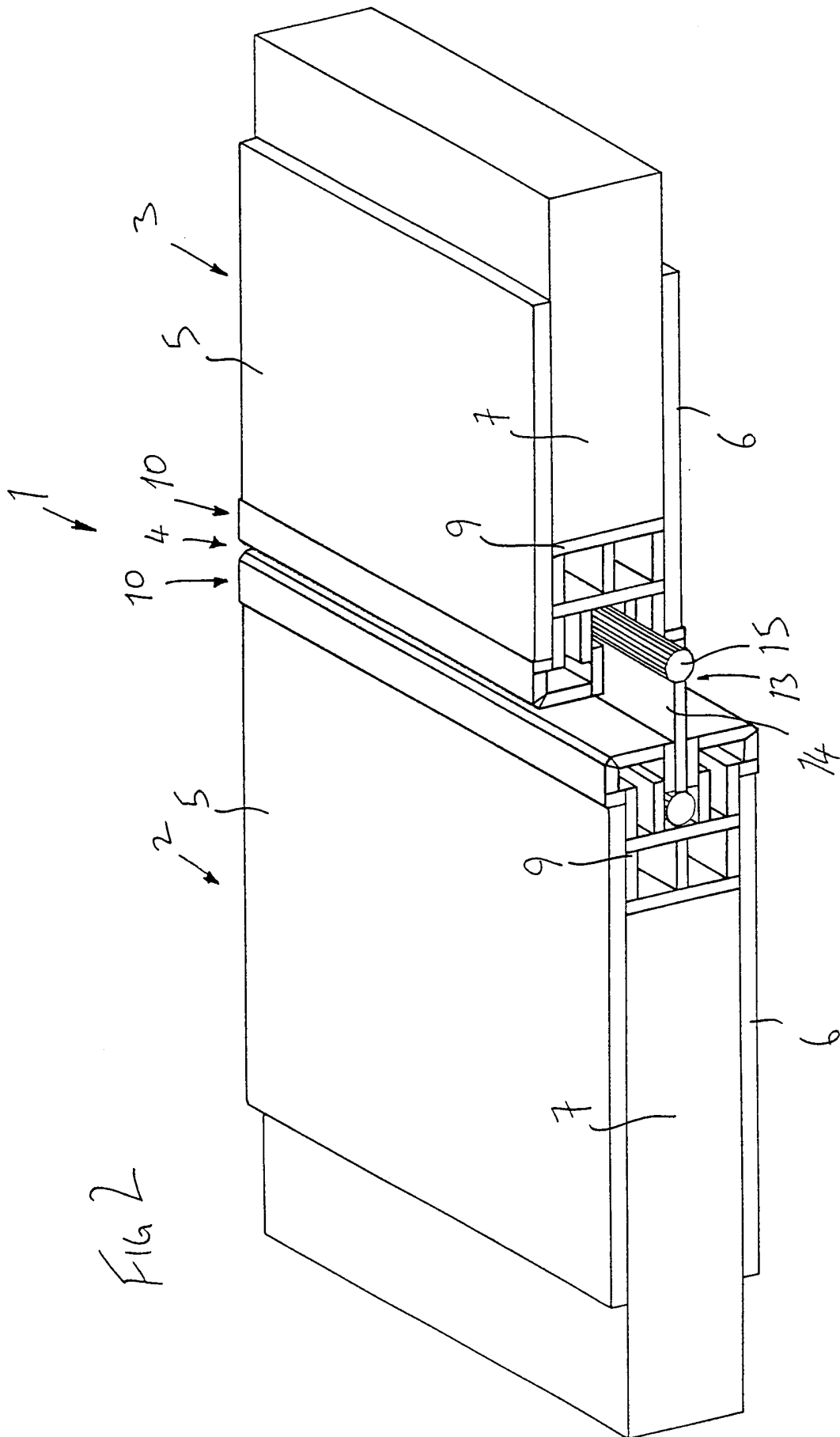


Fig 2

FIG 4

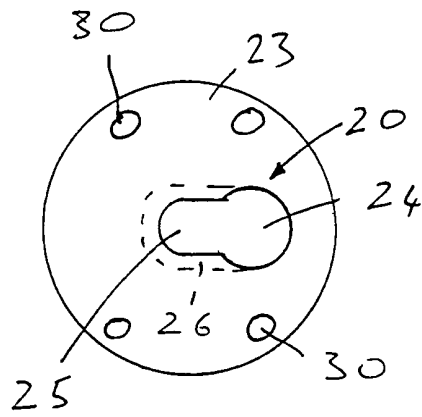


FIG 3

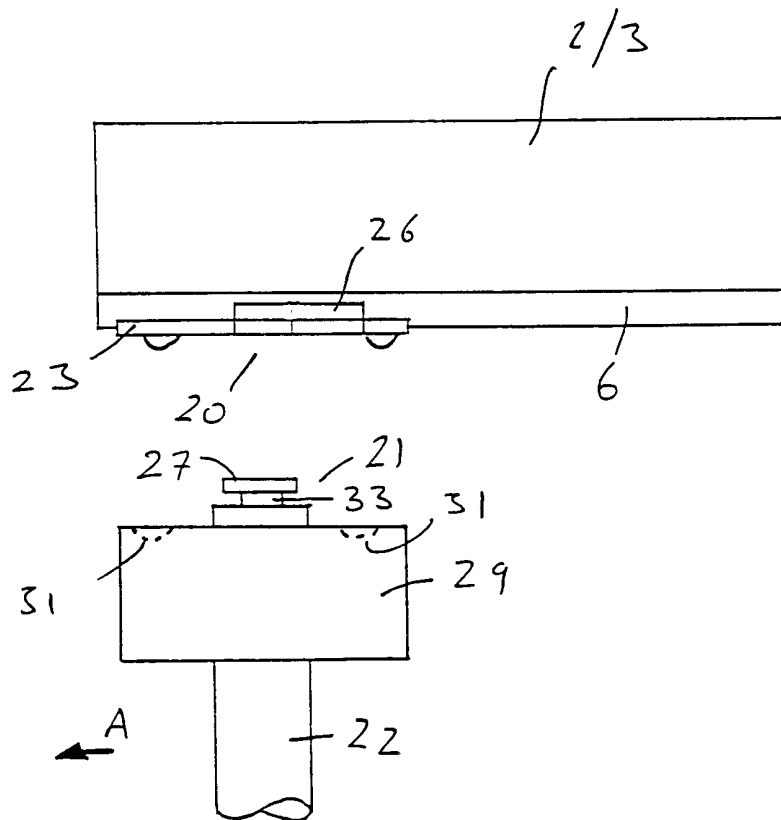


Fig 5

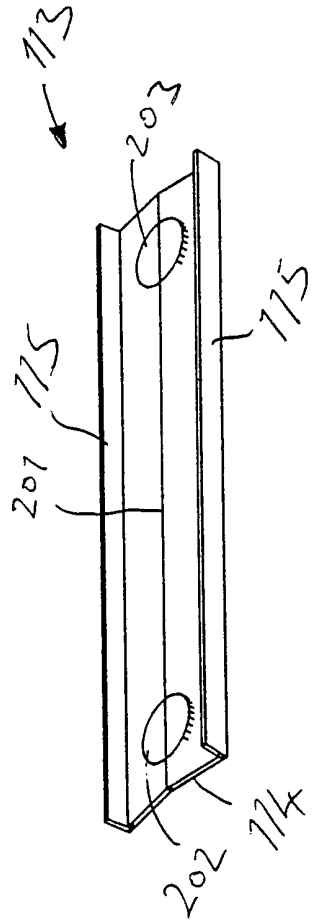
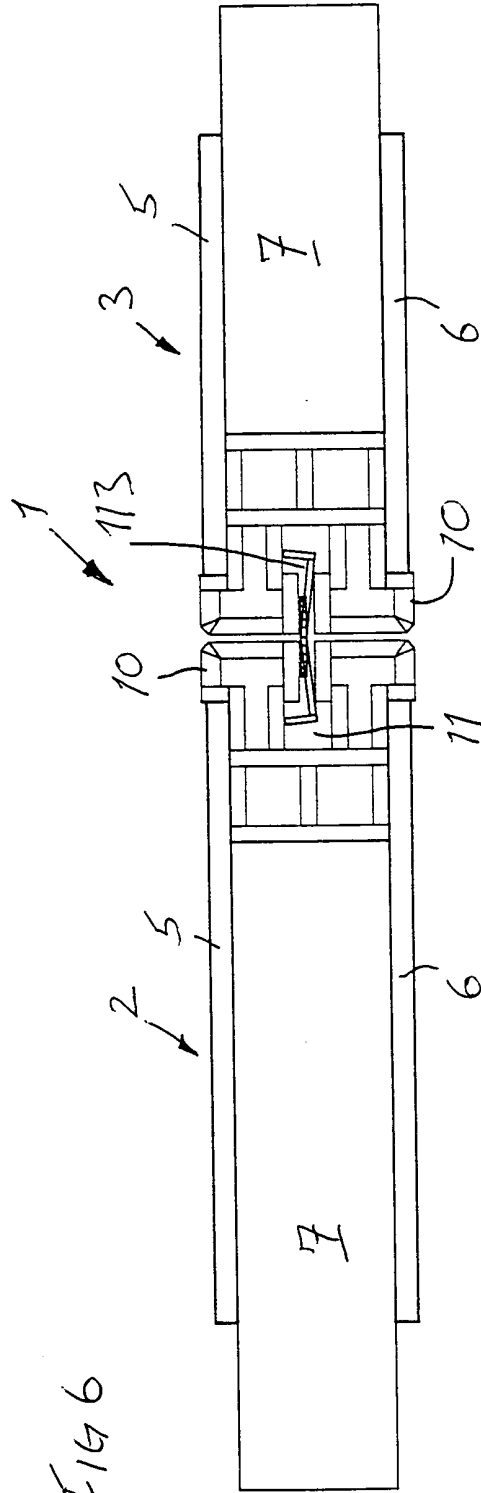
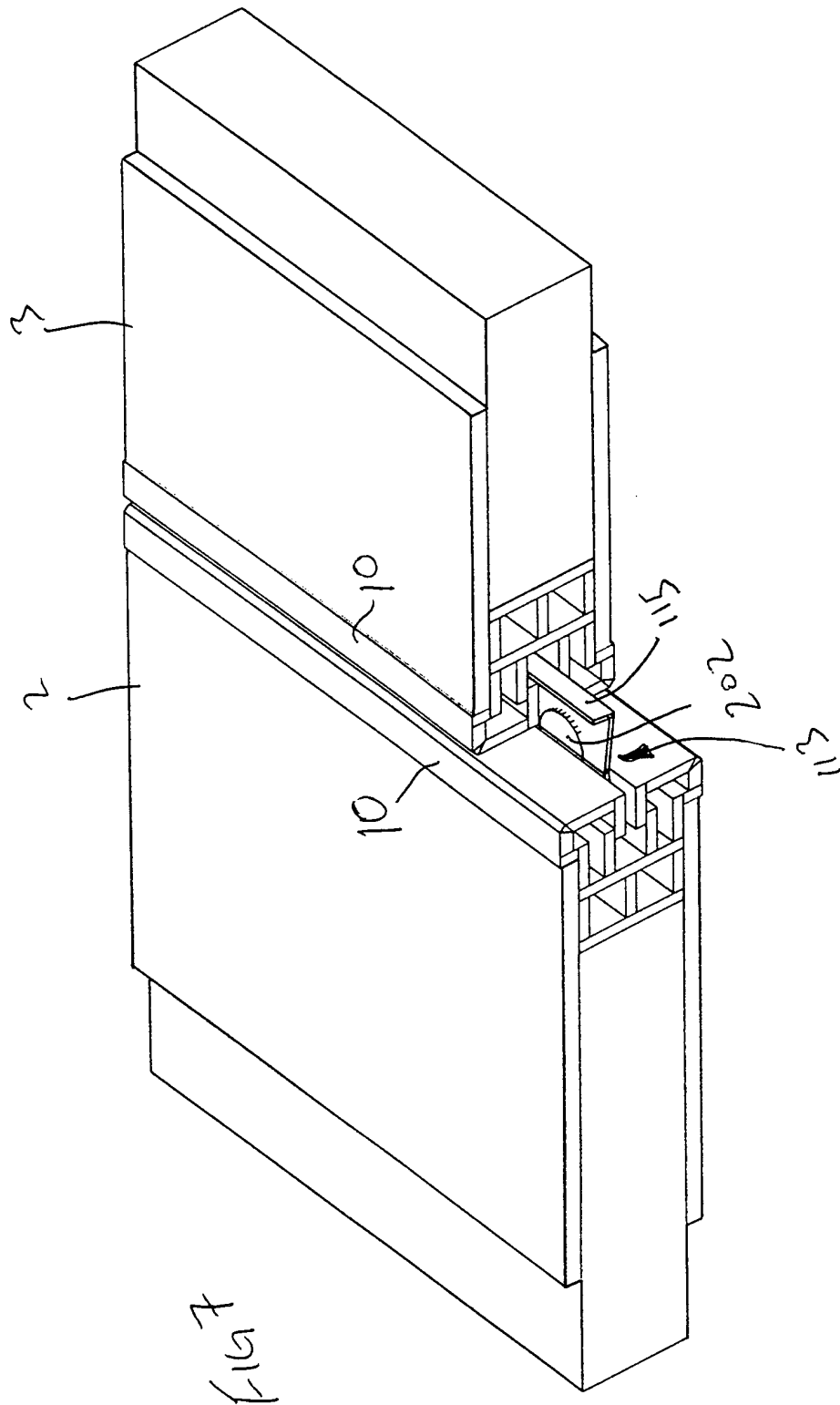


Fig 6





INTERNATIONAL SEARCH REPORT

Intern. Application No

PCT/GB 00/02164

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E04C2/36 E04B1/61 E04H3/24 F16B21/09

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E04C B32B E04B E04H F16B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 879 152 A (GREEN) 7 November 1989 (1989-11-07)	1-9, 11, 12, 15-18
Y	column 3, line 43 -column 4, line 68; figures 1,2	10, 13, 14
Y	GB 1 444 346 A (DUFAYLITE DEVELOPMENT LIMITED) 28 July 1976 (1976-07-28) page 1, line 13 - line 30; figures 2,3	10
Y	EP 0 400 599 A (PHILLIPS PETROLEUM COMPANY) 5 December 1990 (1990-12-05) column 3, line 28 -column 4, line 27; figures 1,2	13, 14
A	US 4 845 915 A (ROGERS ET AL.) 11 July 1989 (1989-07-11) column 2, line 8 - line 23; figures 1-3, 5, 6	19-21
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search

30 August 2000

Date of mailing of the international search report

12/09/2000

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 00/02164

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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X	WO 98 34032 A (HODODI)	25
Y	6 August 1998 (1998-08-06)	26-29
A	page 5, line 11 -page 6, line 36; figures 1,3	22-24
Y	----- EP 0 884 425 A (BRAGHIERI)	26-29
A	16 December 1998 (1998-12-16) cited in the application	39-42
X	column 2, line 34 -column 3, line 36; figures 1-5	30-37
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A	20 June 1985 (1985-06-20) the whole document	
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